REMARKS

In accordance with the foregoing, claims 1-13 have been amended and claims 14-17 have been added. Accordingly, claims 1-17 are pending and under consideration.

Claim objections

On page 2 of the Office Action the Examiner has objected to claims 1, 4, 5, 8, 9 and 12 because of the informalities. Claims 1, 4, 5, 8, 9 and 12 are formally amended. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objection to claims 1, 4, 5, 8, 9 and 12.

Rejection under 35 U.S.C. §112

On page 2 of the Office Action the Examiner has rejected claims 4, 8 and 12 under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 4, 8 and 12 are amended to more clearly recite the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 4, 8 and 12.

Rejection under 35 U.S.C. §102

On pages 2-5 of the Office Action the Examiner has rejected all claims under 35 U.S.C. §102(e) as being anticipated by Futrell et al. (U.S. Patent 6,238,824).

The Prior Art

Futrell et al. (U.S. Patent 6,238,824) is directed to a method for designing and making a photolithographic reticle. For example, Fig. 4 of Futrell et al. shows areas of overlap 14 where alignment budget borders 13 overlap correction areas 12 (column 8, lines 10-12). The areas of overlap 14 are deleted from the correction areas 12 (column 8, lines 13-14). Fig. 5 of Futrell et al. shows modified correction areas 12 from which areas of overlap 14 have been removed (column 8, lines 15-17).

The Present Claimed Invention Patentably Distinguishes Over the Prior Art

Claim 1

Claim 1, as amended, of the present invention recites an exposure method "converting the exposure pattern data into minus objective pattern data and minus pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data," and "generating the bitmapped pattern data by deleting the minus pattern data from the minus objective pattern data."

At least one of the advantages of amended claim 1 is to reduce a number of pattern data after optical proximity correction. It is respectfully submitted that Futrell et al. fails to disclose or suggest each and every feature recited in amended claim1, and therefore fails to provide the advantages which are provided by the present invention. Futrell et al. merely discloses, as mentioned above, deleting the areas of overlap14 where the alignment budget borders 13 overlap the correction areas 12, from the correction areas 12. Hence, in Futrell et al., there exists no data corresponding to the areas of overlap14, which is deleted from the overlap correction areas 12. In addition, since the correction areas 12 and alignment budget borders 13 of Futrell et al. are originally independent from each other, the correction areas 12 and the alignment budget borders 13 are not converted from one pattern (the exposure pattern data), and the alignment budget borders 13 are not included in the correction areas 12.

Thus, Futrell et al. fails to disclose or suggest at least the features of "converting the exposure pattern data into minus objective pattern data and minus pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data," and "generating the bitmapped pattern data by deleting the minus pattern data from the minus objective pattern data," as recited in amended claim 1. Accordingly, Applicants respectfully submit that amended claim1 patentably distinguishes over the prior art.

Claims 2 and 3

Claims 2 and 3 depend from claim 1 and include all of the features of that claim, plus additional features which are not taught or suggested by the prior art. Therefore, it is submitted that claims 2 and 3 patentably distinguish over the prior art.

Claim 4

Claim 4, as amended, recites "converting the exposure pattern data into minus objective pattern data and minus pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data," and "generating the bitmapped pattern data by deleting the minus pattern data from ... the minus objective pattern data". Therefore, it is submitted that claim 4 patentably distinguishes over the prior art.

Claim 5

Claim 5, as amended, recites, "a correction processing unit which converts the exposure pattern data into minus objective pattern data and minus pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data," and a "bitmap processing unit which generates the bitmapped pattern data by deleting the minus pattern data from the minus objective pattern data". Therefore, it is submitted that claim 5 patentably distinguishes over the prior art.

Claims 6 and 7

Claims 6 and 7 depend from claim 5 and include all of the features of that claim plus additional features which are not taught or suggested by the prior art. Therefore, it is submitted that claims 6 and 7 patentably distinguish over the prior art.

Claim 8

Claim 8, as amended, recites, "an optional second correction processing unit which converts the exposure pattern data into minus objective pattern data and minus pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data," and a "bitmap processing unit which generates the bitmapped pattern data by deleting the minus pattern data from ... the minus objective pattern data". Therefore, it is submitted that claim 8 patentably distinguishes over the prior art.

Claim 9

Claim 9, as amended recites "a correction processing unit which converts the exposure pattern data into minus objective pattern data and minus pattern data to be deleted from the

minus objective pattern data, to generate the corrected exposure pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data," as recited in amended claim 9. Therefore, it is submitted that claim 9 patentably distinguishes over the prior art.

Claims 10 and 11

Claims 10 and 11 depend from claim 9 and include all of the features of that claim plus additional features which are not taught or suggested by the prior art. Therefore, it is submitted that claims10 and 11 patentably distinguish over the prior art.

Claim 12

Claim 12, as amended recites, "an optional second correction processing unit which converts the exposure pattern data into minus objective pattern data and minus pattern data to be deleted from the minus objective pattern data, to generate the corrected exposure pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data," as recited in amended claim 12. Therefore, it is submitted that claim 12 patentably distinguishes over the prior art.

Claim 13

Claim 13, as amended recites, "a bitmap processing unit which inputs minus objective pattern data and minus pattern data to be deleted from the minus objective pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data, and generates the bitmapped pattern data by deleting the minus pattern data from the minus objective pattern data". Therefore, it is submitted that claim 13 patentably distinguishes over the prior art.

Claim 14

New claim 14 recites, "converting the exposure pattern data into minus objective pattern data and minus pattern data to be deleted from the minus objective pattern data, to generate the corrected exposure pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data". Therefore, it is

submitted that claim 14 patentably distinguishes over the prior art.

Claims 15 and 16

Claims 15 and 16 depend from claim 14 and include all of the features of that claim plus additional features which are not taught or suggested by the prior art. Therefore, it is submitted that claims15 and 16 patentably distinguish over the prior art.

Claim 17

New claim 17 recites, "converting the exposure pattern data into minus objective pattern data and minus pattern data to be deleted from the minus objective pattern data, wherein an area corresponding to the minus pattern data is included in an area corresponding to the minus objective pattern data". Therefore, it is submitted that claim 17 patentably distinguishes over the prior art.

Summary

It is submitted that Applicants' amendments and remarks have clearly overcome the objections and rejections set forth in the Office Action dated May 14, 2004. Applicants' amendments and remarks have distinguished claims 1-13 from Futrell et al. and thus overcome the rejections of these claims under 35 U.S.C. §102(e). Thus, claims 1-17 are deemed to be in a condition suitable for allowance. Reconsideration of the claims and early notice of allowance are earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 10-14-04

By: _____
John C. Garvey
Registration No. 28,607

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501